

**TITLE: GLIDING CHAIR UNIT WITH CUSHIONING MEMBERS**  
**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to a gliding chair  
5 unit, more particularly to a gliding chair unit with  
left and right cushioning members.

**2. Description of the Related Art**

A conventional gliding chair unit generally  
includes a base frame, an upper frame, and left and  
10 right seat members. The base frame includes opposite  
left and right rods that extend in a longitudinal  
direction, and opposite front and rear rods that  
extend in a transverse direction relative to the  
longitudinal direction and that interconnect the left  
15 and right rods. The upper frame is mounted slidably  
on the base frame, and includes front and rear rods  
that are respectively disposed on the front and rear  
rods of the base frame, and left and right rods that  
extend in the longitudinal direction, that  
20 interconnect the front and rear rods of the upper frame,  
and that are respectively disposed adjacent to the  
left and right rods of the base frame. The left and  
right seat members are secured on the upper frame, and  
are disposed adjacent to the left and right rods of  
25 the upper frame, respectively. The upper frame is  
slidable on the base frame between right and left  
positions.

The conventional gliding chair unit generates noise and shock during sliding movement of the upper frame relative to the base frame.

#### **SUMMARY OF THE INVENTION**

5       Therefore, the object of this invention is to provide a gliding chair unit having cushioning members that can reduce noise and that can absorb shock during the sliding movement of an upper frame relative to a base frame.

10       According to the present invention, a gliding chair unit includes: a base frame including opposite left and right rods that extend in a longitudinal direction, and opposite front and rear rods that extend in a transverse direction relative to the longitudinal  
15       direction and that interconnect the left and right rods; an upper frame mounted slidably on the base frame, and including front and rear rods that are disposed above and aligned with the front and rear rods of the base frame, respectively, and left and right rods that  
20       extend in the longitudinal direction, that interconnect the front and rear rods of the upper frame, and that are respectively disposed adjacent to the left and right rods of the base frame, the upper frame being slidable on the base frame in the transverse  
25       direction between a left position, in which the right rod of the upper frame is disposed leftwise of the right rod of the base frame in the transverse direction,

and in which the left rod of the upper frame is disposed leftwise of the left rod of the base frame in the transverse direction, and a right position, in which the right rod of the upper frame is disposed rightwise of the right rod of the base frame in the transverse direction, and in which the left rod of the upper frame is disposed rightwise of the left rod of the base frame in the transverse direction; left and right seat members mounted securely on the upper frame and disposed respectively adjacent to the left and right rods of the upper frame; a footrest panel disposed between the left and right seat members, connected securely to the front and rear rods of the base frame, and having left and right sides, each of which has opposite front and rear ends; a cushioning unit including left and right cushioning members, each of which includes a bracket fixed to one of the front and rear ends of a respective one of the left and right sides of the footrest panel and projecting outwardly therefrom in the transverse direction, and a roller that is made from an elastomeric material and that is mounted rotatably on the bracket; and a gliding mechanism disposed between the base frame and the upper frame to permit gliding movement of the upper frame on the base frame between the left and right positions, the gliding mechanism including left and right rail units disposed respectively adjacent to the

left and right sides of the footrest panel, and left and right wheel units slidably and respectively engaging the left and right rail units, each of the left and right rail units including curved upper and lower front rails that are respectively formed on the front rods of the base and upper frames and that define a front wheel-receiving space therebetween, and curved upper and lower rear rails that are respectively formed on the rear rods of the base and upper frames and that define a rear wheel-receiving space therebetween which is opposite to the front wheel-receiving space, each of the left and right wheel units including a connecting rod that extends in the longitudinal direction and that has two opposite ends, and a pair of front and rear wheels that are respectively mounted on the opposite ends of the connecting rod, that are respectively received in the front and rear wheel-receiving spaces in a respective one of the left and right rail units, and that slidably and respectively engage the curved upper and lower front rails and the curved upper and lower rear rails of the respective one of the left and right rail units, each of the curved upper front and rear rails having an inner end projecting toward the footrest panel, the roller of the right cushioning member colliding against the inner end of an adjacent one of the curved upper front and rear rails of the right rail unit when

the upper frame is moved to the left position, the roller of the left cushioning member colliding against the inner end of an adjacent one of the curved upper front and rear rails of the left rail unit when the upper frame is moved to the right position.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Other features and advantages of this invention will become more apparent in the following detailed description of the preferred embodiment of this invention, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of the preferred embodiment of a gliding chair unit according to the present invention;

Figure 2 is a fragmentary perspective view of the preferred embodiment;

Figure 3 is a fragmentary, partly sectional side view of the preferred embodiment at a normal position;

Figure 4 is a fragmentary, partly sectional side view of the preferred embodiment when an upper frame is at a left position relative to a base frame; and

Figure 5 is a fragmentary, partly sectional side view of the preferred embodiment when the upper frame is at a right position relative to the base frame.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to Figures 1 and 2, the preferred embodiment of a gliding chair unit according to the

present invention is shown to include a base frame 2, an upper frame 4, left and right seat members 6, a footrest panel 31, a cushioning unit, a gliding mechanism 5, and a table 7.

5       As illustrated, the base frame 2 includes opposite left and right rods 21 that extend in a longitudinal direction, and opposite front and rear rods 22 that extend in a transverse direction relative to the longitudinal direction and that interconnect the left  
10       and right rods 21.

      The upper frame 4 is mounted slidably on the base frame 2, and includes front and rear rods 42 that are disposed above and aligned with the front and rear rods 22 of the base frame 2, respectively, and left and  
15       right rods 41 that extend in the longitudinal direction, that interconnect the front and rear rods 42 of the upper frame 4, and that are respectively disposed adjacent to the left and right rods 21 of the base frame 2. The upper frame 4 is slidable on the base  
20       frame 2 in the transverse direction between a left position of Figure 4, in which the right rod 41 of the upper frame 4 is disposed leftwise of the right rod 21 of the base frame 2 in the transverse direction, and in which the left rod 41 of the upper frame 4 is  
25       disposed leftwise of the left rod 21 of the base frame 2 in the transverse direction, and a right position of Figure 5, in which the right rod 41 of the upper

frame 4 is disposed rightwise of the right rod 21 of the base frame 2 in the transverse direction, and in which the left rod 41 of the upper frame 4 is disposed rightwise of the left rod 21 of the base frame 2 in the transverse direction. When the upper frame 4 is disposed at a normal position as shown in Figure 3, the left and right rods 41 of the upper frame 4 are vertically aligned with the left and right rods 21 of the base frame 2, respectively (see Figure 3).

The left and right seat members 6 are mounted securely on the upper frame 4, span the front and rear rods 42 of the upper frame 4, and are disposed adjacent to the left and right rods 41, respectively.

The footrest panel 31 is disposed between the left and right seat members 6, is connected securely to the front and rear rods 22 of the base frame 2, and has left and right sides, each of which has opposite front and rear ends.

The cushioning unit includes left and right cushioning members 32, each of which includes a first bracket 321 and a first roller 323. The first bracket 321 of each of the left and right cushioning members 32 is fixed to one of the front and rear ends of a respective one of the left and right sides of the footrest panel 31, and projects outwardly therefrom in the transverse direction. The first roller 323 of each of the left and right cushioning members 32 is

made from an elastomeric material, and is mounted rotatably on the first bracket 321. Each of the left and right cushioning members 32 further includes a second bracket 321 and a second roller 323. The second  
5 bracket 321 is fixed to the other one of the front and rear ends of the respective one of the left and right sides of the footrest panel 31, and projects outwardly therefrom in the transverse direction. The second roller 323 is also made from an elastomeric material,  
10 and is mounted rotatably on the second bracket 321.

The gliding mechanism 5 is disposed between the base frame 2 and the upper frame 4 to permit gliding movement of the upper frame 4 on the base frame 2 between the left and right positions, and includes  
15 left and right rail units 510 and left and right wheel units 530. The left and right rail units 510 are disposed respectively adjacent to the left and right sides of the footrest panel 31. The left and right wheel units 530 slidably and respectively engage the  
20 left and right rail units 510. Each of the left and right rail units 510 includes curved upper and lower front rails 51,52 that are respectively formed on the front rods 22,42 of the base and upper frames 2,4 and that define a front wheel-receiving space 56  
25 therebetween, and curved upper and lower rear rails 51,52 that are respectively formed on the rear rods 22,42 of the base and upper frames 2,4 and that define



a rear wheel-receiving space 56 therebetween which is opposite to the front wheel-receiving space 56. Each of the left and right wheel units 530 includes a connecting rod 54 that extends in the longitudinal direction and that has two opposite ends, and a pair of front and rear wheels 53 that are respectively mounted on the opposite ends of the connecting rod 54, that are respectively received in the front and rear wheel-receiving spaces 56 in a respective one of the left and right rail units 510, and that slidably and respectively engage the curved upper and lower front rails 51,52 and the curved upper and lower rear rails 51,52 of the respective one of the left and right rail units 510. Each of the curved upper front and rear rails 51 has an inner end 511 projecting toward the footrest panel 31, and an outer end 512 opposite to the inner end 511. When the upper frame 4 is moved to the left position, as shown in Figure 4, the first and second rollers 323 of the right cushioning member 32 respectively collide against the inner ends 511 of the curved upper front and rear rails 51 of the right rail unit 510, thereby absorbing the shock resulting from the collision. When the upper frame 4 is moved to the right position, as shown in Figure 5, the first and second rollers 323 of the left cushioning member 32 respectively collide against the inner ends 511 of the curved upper front and rear rails 51 of the left rail

unit 510, thereby absorbing the shock resulting from the collision.

The preferred embodiment further includes a panel support 311 disposed below the footrest panel 31. The panel support 311 includes left and right connecting rods 312, left front and rear supporting posts 313, and right front and rear supporting posts 313. The left and right connecting rods 312 are respectively disposed below the left and right sides of the footrest panel 31. Each of the left and right connecting rods 312 extends in the longitudinal direction, and has two opposite ends securely and respectively connected to the front and rear rods 22 of the base frame 2. The left front and rear supporting posts 313 project upwardly and respectively from the two opposite ends of the left connecting rod 312 to connect with the front and rear ends of the left side of the footrest panel 31, respectively. The right front and rear supporting posts 313 project upwardly and respectively from the two opposite ends of the right connecting rod 312 to connect with the front and rear ends of the right side of the footrest panel 31, respectively. Under this condition, the footrest panel 31 is disposed at an elevation above the left and right connecting rods 312 such that the footrest panel 311 is generally flush with the front and rear rods 42 of the upper frame 4. Due to the presence of

a front gap 80 between the front rods 42, 22 of the upper and base frames 4, 2, and a rear gap 80 between the rear rods 42, 22 of the upper and base frames 4, 2, preferably, elongated front and rear shields 8 are fixed  
5 respectively to the front and rear rods 42 of the upper frame 4 and extend downwardly and respectively from the front and rear rods 42 of the upper frame 4 to cover the front and rear gaps 80.

The table 7 includes a U-shaped plate 73 extending  
10 in the longitudinal direction and secured to the front and rear rods 42 of the upper frame 4 so as to be disposed at an elevation above the footrest panel 31, left and right legs 71 extending upwardly from the plate 73, and a tabletop 72 fixed on upper ends of the  
15 left and right legs 71 such that the tabletop 72 is disposed between the seat members 6.

For shading purposes, a canopy 9 is mounted on a support member 9" which has supporting rods fixed on the left and right seat members 6.

20 With this invention thus explained, it is apparent that numerous modifications and variations can be made without departing from the scope and spirit of this invention. It is therefore intended that the invention be limited only as indicated in the appended claims.